

CLAIMS

I Claim:

1. Wet clutch (100) or friction plate brake,
 - 5 - with a clutch housing (1) mounted rotatably about a rotation axis (R) and essentially having the shape of a hollow cylinder, carrying an essentially ring shaped outer friction plate or a plurality of essentially ring shaped outer friction plates (25.1, 25.2, 25.3) and displaceable in essentially the axial direction,
 - 10 - with a clutch hub (2) mounted at least partially coaxially to the clutch housing (1), rotatable about the rotation axis (R), and essentially having the shape of a hollow cylinder, carrying an essentially ring shaped inner friction plate or a plurality of essentially ring shaped inner friction plates (4, 24, 6, 26, 27.1, 27.2) displaceable in essentially the axial direction,
 - 15 - wherein the outer friction plates (25.1, 25.2, 25.3) and the inner friction plates (4, 24, 6, 26, 27.1, 27.2) are provided alternately in the axial direction (ax) to form a friction pack (3, 23) such that respectively one broad surface of an outer friction plate (25.1, 25.3, 25.3) can be brought into frictional contact with a broad surface (25.1a, 27.1b, 27.2a, 27.2b, 24a, 20 26b) of an inner friction plate (4, 24, 6, 26, 27.1, 27.2),
 - 25 - with an essentially hollow cylindrical shaped apply piston support device (12) provided coaxial to the clutch hub and lying radially (r) inwardly, which is essentially rigidly connected with the clutch hub (2) by means of a connecting device (20),
 - 30 - with an apply piston (8) essentially in the shape of a hollow cylinder, mounted essentially axially displaceable on an essentially cylindrically shaped contact surface (12.1) of the apply piston support device (12), including an essentially ring shaped apply piston support plate (8.8), wherein the apply piston support device (12) and the piston support plate (8.6) enclose an apply piston space (15), and

- including an essentially ring shaped pressure device (8.4), for bringing the respective contact surfaces of the friction plates 25.1, 25.2, 25.3, 4, 24, 6, 26, 27.1, 27.2 of the friction pack (3, 23) into frictional contact,
- 5 - with an essentially hollow cylindrical shaped balance piston (14) provided coaxial to the clutch hub (2), which is essentially rigidly connected with the apply piston support device (12), and
- 10 - including an essentially ring shaped spring support (14.1) and an essentially cylinder shaped wall (14.3) with an essentially cylinder shaped contact surface (14.4), guided axially (ax) displaceable and bordered by an essentially cylinder shaped contact surface (8.5) of the apply piston (8) so as to form an equalizing space (16),
- 15 thereby characterized, that
- the contact or support surfaces (14.4, 8.5) of the balance piston (14) and the apply piston (8) are provided coaxial between the clutch hub (2) and the apply piston support device (12).
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- 2. Wet clutch (100) according to Claim 1, thereby characterized, that the balance piston (14) includes at least one contact point (A2, A3), at which the balance piston (14) is connected with the clutch hub (2).
- 25 3. Wet clutch (100) according to Claim 2, thereby characterized, that at least one contact point (A2) to the clutch hub (2) is provided on the spring support (14.1).
- 30 4. Wet clutch (100) according to Claim 2 or 3, thereby characterized, that at least one contact point (A3) to the clutch hub (2) is provided at the outer surface of the cylinder (14.3) of the balance piston (14).

5. Wet clutch (100) according to Claim 4, in which the apply piston (8) facing side of the clutch hub (2) includes a radially (r) inwardly facing oil collecting ring (10), thereby characterized, that at least one contact point (A3) to the balance piston (14) is provided at the inwardly facing oil collecting ring (10), forming an oil space (11) between the balance piston (14), clutch hub (2), and oil collecting ring (10), which provides forced cooling oil flow.
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6. Wet clutch according to Claim 4, in which the connecting device is formed in the manner of a hollow cylinder (20), thereby characterized, that the hollow cylinder (20) includes a common oil supply channel (19.2) for the equalizing space (16) and the oil space (11).
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7. Wet clutch according to Claim 4, in which the connecting device is formed in the manner of a hollow cylinder (20), thereby characterized, that the hollow cylinder (20) includes a separate oil supply channel for the equalizing space (16) and the oil space (11).
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